

ART 34 AMDT

CT/US 00/22725
IPEAUS 28 AUG 2001

Pklseq1.app
SEQUENCE LISTING

<110> Ogas, Joseph P.
Somerville, Christopher R.

<120> Methods and Compositions for Regulating Developmental
Identity

<130> 7024-473

<140> Unknown

<141> 2000-08-18

<150> US 60/149,975

<151> 1999-08-20

<160> 30

<170> MS Notebook

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<211> 4177

<212> DNA

<213> Arabidopsis thaliana

<220>

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Val Tyr Asn Leu Asp Asp Ser Asp Asp Asp Asp Phe Val Pro Lys Lys
20 25 30
gat cga acc ttt gag caa gtc gag gct att gtc aga act gat gcg aaa 144
Asp Arg Thr Phe Glu Gln Val Glu Ala Ile Val Arg Thr Asp Ala Lys
35 40 45
gaa aat gca tgt cag gct tgt ggg gaa agt act aat ctt gta agc tgc 192

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| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Asn | Ala | Cys | Gln | Ala | Cys | Gly | Glu | Ser | Thr | Asn | Leu | Val | Ser | Cys | |
| 50 | | | | | | 55 | | | | | 60 | | | | | |
| aat | aca | tgc | act | tat | gcg | ttc | cat | gct | aaa | tgc | tta | gtt | cca | cct | ctt | 240 |
| Asn | Thr | Cys | Thr | Tyr | Ala | Phe | His | Ala | Lys | Cys | Leu | Val | Pro | Pro | Leu | |
| 65 | | | | | 70 | | | | | 75 | | | | | 80 | |
| aaa | gat | gct | tcc | gtg | gaa | aat | tgg | aga | tgc | cct | gaa | tgt | gtt | agt | cct | 288 |
| Lys | Asp | Ala | Ser | Val | Glu | Asn | Trp | Arg | Cys | Pro | Glu | Cys | Val | Ser | Pro | |
| | | | | 85 | | | | | 90 | | | | | 95 | | |
| ctt | aac | gag | ata | gat | aag | ata | ttg | gat | tgt | gaa | atg | cgt | cct | aca | aaa | 336 |
| Leu | Asn | Glu | Ile | Asp | Lys | Ile | Leu | Asp | Cys | Glu | Met | Arg | Pro | Thr | Lys | |
| | | | 100 | | | | | 105 | | | | | 110 | | | |
| tct | agt | gaa | caa | ggg | tcc | tcc | gat | gcg | gaa | ccg | aag | cca | att | ttt | gtg | 384 |
| Ser | Ser | Glu | Gln | Gly | Ser | Ser | Asp | Ala | Glu | Pro | Lys | Pro | Ile | Phe | Val | |
| | | 115 | | | | | 120 | | | | | 125 | | | | |
| aaa | cag | tat | ctc | gtg | aag | tgg | aag | gga | tta | tca | tac | ctt | cac | tgc | tct | 432 |
| Lys | Gln | Tyr | Leu | Val | Lys | Trp | Lys | Gly | Leu | Ser | Tyr | Leu | His | Cys | Ser | |
| | 130 | | | | | 135 | | | | | 140 | | | | | |
| tgg | gtg | cct | gag | aag | gag | ttc | cag | aag | gct | tat | aag | tca | aat | cat | cgt | 480 |
| Trp | Val | Pro | Glu | Lys | Glu | Phe | Gln | Lys | Ala | Tyr | Lys | Ser | Asn | His | Arg | |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 | |
| tta | aaa | acc | aga | gtg | aac | aat | ttt | cac | cgt | caa | atg | gag | tca | ttc | aat | 528 |
| Leu | Lys | Thr | Arg | Val | Asn | Asn | Phe | His | Arg | Gln | Met | Glu | Ser | Phe | Asn | |
| | | | | 165 | | | | | 170 | | | | | 175 | | |
| aac | agc | gaa | gat | gat | ttt | gtt | gcc | ata | cgt | cct | gag | tgg | acc | act | gtt | 576 |
| Asn | Ser | Glu | Asp | Asp | Phe | Val | Ala | Ile | Arg | Pro | Glu | Trp | Thr | Thr | Val | |
| | | | 180 | | | | | 185 | | | | | 190 | | | |
| gat | cgg | att | ctt | gcc | tgc | aga | gag | gaa | gat | ggg | gag | ctg | gaa | tat | ctt | 624 |
| Asp | Arg | Ile | Leu | Ala | Cys | Arg | Glu | Glu | Asp | Gly | Glu | Leu | Glu | Tyr | Leu | |
| | | 195 | | | | | 200 | | | | | 205 | | | | |
| gtc | aaa | tat | aaa | gag | cta | tcc | tat | gat | gaa | tgt | tat | tgg | gag | tca | gaa | 672 |
| Val | Lys | Tyr | Lys | Glu | Leu | Ser | Tyr | Asp | Glu | Cys | Tyr | Trp | Glu | Ser | Glu | |

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| | | | | | |
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| Ser Asp Ile Ser Thr Phe Gln Asn Glu Ile Gln Arg Phe Lys Asp Val | | | | | |
| 225 | | 230 | | 235 | 240 |
| aat tct aga act cgc aga agt aaa gat gtt gac cat aaa aga aat ccc | 768 | | | | |
| Asn Ser Arg Thr Arg Arg Ser Lys Asp Val Asp His Lys Arg Asn Pro | | | | | |
| | | 245 | | 250 | 255 |
| aga gac ttt caa cag ttt gat cat act cct gaa ttc ctc aaa ggc ttg | 816 | | | | |
| Arg Asp Phe Gln Gln Phe Asp His Thr Pro Glu Phe Leu Lys Gly Leu | | | | | |
| | | 260 | | 265 | 270 |
| tta cat cca tac cag ctt gag gga ctt aat ttt ttg cgg ttc tcg tgg | 864 | | | | |
| Leu His Pro Tyr Gln Leu Glu Gly Leu Asn Phe Leu Arg Phe Ser Trp | | | | | |
| | | 275 | | 280 | 285 |
| tca aaa cag acg cat gta atc ctt gct gat gaa atg gga cta ggc aag | 912 | | | | |
| Ser Lys Gln Thr His Val Ile Leu Ala Asp Glu Met Gly Leu Gly Lys | | | | | |
| | | 290 | | 295 | 300 |
| aca att caa agc att gcc ctt tta gct tca ctt ttt gag gag aac ctc | 960 | | | | |
| Thr Ile Gln Ser Ile Ala Leu Leu Ala Ser Leu Phe Glu Glu Asn Leu | | | | | |
| | | 305 | | 310 | 315 |
| att ccg cat ttg gta att gct cct cta tcg act ctg cgt aac tgg gag | 1008 | | | | |
| Ile Pro His Leu Val Ile Ala Pro Leu Ser Thr Leu Arg Asn Trp Glu | | | | | |
| | | 325 | | 330 | 335 |
| aga gag ttt gcc aca tgg gcc cca cag atg aac gtg gtt atg tat ttt | 1056 | | | | |
| Arg Glu Phe Ala Thr Trp Ala Pro Gln Met Asn Val Val Met Tyr Phe | | | | | |
| | | 340 | | 345 | 350 |
| ggc act gcg caa gct cga gca gtt atc aga gaa cat gag ttt tac tta | 1104 | | | | |
| Gly Thr Ala Gln Ala Arg Ala Val Ile Arg Glu His Glu Phe Tyr Leu | | | | | |
| | | 355 | | 360 | 365 |
| tcg aaa gat caa aaa aag atc aag aaa aag aaa tct gga caa ata agt | 1152 | | | | |
| Ser Lys Asp Gln Lys Lys Ile Lys Lys Lys Lys Ser Gly Gln Ile Ser | | | | | |
| | | 370 | | 375 | 380 |

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agc gaa agc aag caa aaa aga atc aag ttt gat gtc ctc ctc aca tcg      1200
Ser Glu Ser Lys Gln Lys Arg Ile Lys Phe Asp Val Leu Leu Thr Ser
385                               390                395                400

tat gag atg atc aac cta gat tca gca gtt cta aaa cca att aag tgg      1248
Tyr Glu Met Ile Asn Leu Asp Ser Ala Val Leu Lys Pro Ile Lys Trp
                               405                410                415

gag tgc atg att gtt gat gaa ggt cat cga ctg aaa aat aag gat tca      1296
Glu Cys Met Ile Val Asp Glu Gly His Arg Leu Lys Asn Lys Asp Ser
                               420                425                430

aag ctg ttc tct tca ttg aca cag tat tca agt aac cac cgt att ctt      1344
Lys Leu Phe Ser Ser Leu Thr Gln Tyr Ser Ser Asn His Arg Ile Leu
                               435                440                445

ctg aca gga aca cca ctt cag aac aac ttg gat gaa ctt ttc atg ctc      1392
Leu Thr Gly Thr Pro Leu Gln Asn Asn Leu Asp Glu Leu Phe Met Leu
                               450                455                460

atg cat ttt ctt gat gcg ggg aag ttt gga agt ttg gag gag ttc cag      1440
Met His Phe Leu Asp Ala Gly Lys Phe Gly Ser Leu Glu Glu Phe Gln
465                               470                475                480

gag gag ttc aaa gat att aat caa gag gag cag atc tca agg ttg cac      1488
Glu Glu Phe Lys Asp Ile Asn Gln Glu Glu Gln Ile Ser Arg Leu His
                               485                490                495

aaa atg ttg gct cca cat ttg ctc aga agg gta aaa aaa gac gta atg      1536
Lys Met Leu Ala Pro His Leu Leu Arg Arg Val Lys Lys Asp Val Met
                               500                505                510

aaa gac atg ccc ccc aaa aag gag ctc att ttg cgt gtt gat ctg agc      1584
Lys Asp Met Pro Pro Lys Lys Glu Leu Ile Leu Arg Val Asp Leu Ser
                               515                520                525

agt ctg cag aaa gaa tat tac aaa gct att ttt acc cgt aat tat caa      1632
Ser Leu Gln Lys Glu Tyr Tyr Lys Ala Ile Phe Thr Arg Asn Tyr Gln
                               530                535                540

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| | |
|---|------|
| gta ttg aca aaa aag gga ggt gct caa att tcc ctt aat aac att atg | 1680 |
| Val Leu Thr Lys Lys Gly Gly Ala Gln Ile Ser Leu Asn Asn Ile Met | |
| 545 550 555 560 | |
| atg gaa tta cga aaa gta tgc tgc cat cct tat atg cta gag ggt gtt | 1728 |
| Met Glu Leu Arg Lys Val Cys Cys His Pro Tyr Met Leu Glu Gly Val | |
| 565 570 575 | |
| gag cca gtt att cac gac gca aat gaa gct ttc aaa caa ctt ttg gag | 1776 |
| Glu Pro Val Ile His Asp Ala Asn Glu Ala Phe Lys Gln Leu Leu Glu | |
| 580 585 590 | |
| tct tgt gga aag ctg caa ctt cta gat aaa atg atg gtc aaa ctg aaa | 1824 |
| Ser Cys Gly Lys Leu Gln Leu Leu Asp Lys Met Met Val Lys Leu Lys | |
| 595 600 605 | |
| gag caa gga cac aga gtc cta ata tac aca cag ttt cag cat atg ctg | 1872 |
| Glu Gln Gly His Arg Val Leu Ile Tyr Thr Gln Phe Gln His Met Leu | |
| 610 615 620 | |
| gac tta ctt gaa gac tac tgt acc cat aag aaa tgg cag tac gag cga | 1920 |
| Asp Leu Leu Glu Asp Tyr Cys Thr His Lys Lys Trp Gln Tyr Glu Arg | |
| 625 630 635 640 | |
| att gat gga aag gtt ggc gga gct gag cgg caa ata cgc ata gat cgg | 1968 |
| Ile Asp Gly Lys Val Gly Gly Ala Glu Arg Gln Ile Arg Ile Asp Arg | |
| 645 650 655 | |
| ttc aat gcc aaa aat tct aac aag ttt tgt ttt ttg ctc tcc aca aga | 2016 |
| Phe Asn Ala Lys Asn Ser Asn Lys Phe Cys Phe Leu Leu Ser Thr Arg | |
| 660 665 670 | |
| gct ggt ggc tta gga ata aat ctt gca acg gct gat aca gta atc att | 2064 |
| Ala Gly Gly Leu Gly Ile Asn Leu Ala Thr Ala Asp Thr Val Ile Ile | |
| 675 680 685 | |
| tat gac agt gac tgg aat cct cat gct gat ctt caa gca atg gct aga | 2112 |
| Tyr Asp Ser Asp Trp Asn Pro His Ala Asp Leu Gln Ala Met Ala Arg | |
| 690 695 700 | |
| gct cat cga ctt ggc caa aca aat aag gtg atg att tat agg ctc ata | 2160 |

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|--|
| Ala | His | Arg | Leu | Gly | Gln | Thr | Asn | Lys | Val | Met | Ile | Tyr | Arg | Leu | Ile | | |
| 705 | | | | | 710 | | | | | 715 | | | | | 720 | | |
| aac | cga | ggc | acc | att | gaa | gaa | agg | atg | atg | caa | ttg | act | aaa | aag | aaa | 2208 | |
| Asn | Arg | Gly | Thr | Ile | Glu | Glu | Arg | Met | Met | Gln | Leu | Thr | Lys | Lys | Lys | | |
| | | | | 725 | | | | | 730 | | | | | 735 | | | |
| atg | gtt | cta | gag | cat | ctt | gtt | gtt | ggg | aaa | ctc | aaa | aca | caa | aac | att | 2256 | |
| Met | Val | Leu | Glu | His | Leu | Val | Val | Gly | Lys | Leu | Lys | Thr | Gln | Asn | Ile | | |
| | | | 740 | | | | | 745 | | | | | 750 | | | | |
| aat | cag | gaa | gag | tta | gat | gac | atc | atc | agg | tat | gga | tca | aag | gag | ctt | 2304 | |
| Asn | Gln | Glu | Glu | Leu | Asp | Asp | Ile | Ile | Arg | Tyr | Gly | Ser | Lys | Glu | Leu | | |
| | | 755 | | | | | 760 | | | | | 765 | | | | | |
| ttt | gct | agt | gaa | gat | gat | gaa | gca | gga | aag | tct | gga | aaa | att | cat | tat | 2352 | |
| Phe | Ala | Ser | Glu | Asp | Asp | Glu | Ala | Gly | Lys | Ser | Gly | Lys | Ile | His | Tyr | | |
| | 770 | | | | | 775 | | | | | 780 | | | | | | |
| gat | gat | gcg | gct | ata | gac | aaa | ttg | ctt | gat | cgt | gat | ctc | gtg | gag | gca | 2400 | |
| Asp | Asp | Ala | Ala | Ile | Asp | Lys | Leu | Leu | Asp | Arg | Asp | Leu | Val | Glu | Ala | | |
| 785 | | | | | 790 | | | | | 795 | | | | 800 | | | |
| gag | gaa | gtc | tca | gtg | gat | gat | gaa | gag | gag | aat | gga | ttc | tta | aag | gct | 2448 | |
| Glu | Glu | Val | Ser | Val | Asp | Asp | Glu | Glu | Glu | Asn | Gly | Phe | Leu | Lys | Ala | | |
| | | | | 805 | | | | | 810 | | | | | 815 | | | |
| ttc | aag | gtg | gct | aat | ttt | gaa | tat | ata | gat | gaa | aat | gag | gca | gca | gca | 2496 | |
| Phe | Lys | Val | Ala | Asn | Phe | Glu | Tyr | Ile | Asp | Glu | Asn | Glu | Ala | Ala | Ala | | |
| | | | 820 | | | | | 825 | | | | | 830 | | | | |
| tta | gag | gca | cag | aga | gtc | gct | gct | gaa | agc | aaa | tct | tca | gca | ggc | aat | 2544 | |
| Leu | Glu | Ala | Gln | Arg | Val | Ala | Ala | Glu | Ser | Lys | Ser | Ser | Ala | Gly | Asn | | |
| | | 835 | | | | 840 | | | | | | 845 | | | | | |
| tct | gat | aga | gca | agt | tat | tgg | gaa | gag | ttg | tta | aaa | gat | aaa | ttt | gag | 2592 | |
| Ser | Asp | Arg | Ala | Ser | Tyr | Trp | Glu | Glu | Leu | Leu | Lys | Asp | Lys | Phe | Glu | | |
| | 850 | | | | | 855 | | | | | 860 | | | | | | |
| ctg | cac | cag | gct | gag | gag | ctt | aat | gct | ctt | gga | aaa | agg | aag | aga | agt | 2640 | |

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|-----|------|-----|-----|-----|-----|------|------|-----|-----|-----|------|------|-----|-----|-----|------|
| Leu | His | Gln | Ala | Glu | Glu | Leu | Asn | Ala | Leu | Gly | Lys | Arg | Lys | Arg | Ser | |
| 865 | | | | | 870 | | | | | 875 | | | | | 880 | |
| cgc | aag | cag | ttg | gta | tcc | att | gaa | gaa | gat | gat | ctt | gct | ggt | ttg | gaa | 2688 |
| Arg | Lys | Gln | Leu | Val | Ser | Ile | Glu | Glu | Asp | Asp | Leu | Ala | Gly | Leu | Glu | |
| | | | | 885 | | | | | 890 | | | | | 895 | | |
| gat | gtg | agc | tct | gat | gga | gat | gaa | agt | tat | gaa | gct | gag | tca | aca | gat | 2736 |
| Asp | Val | Ser | Ser | Asp | Gly | Asp | Glu | Ser | Tyr | Glu | Ala | Glu | Ser | Thr | Asp | |
| | | | 900 | | | | | 905 | | | | | 910 | | | |
| ggt | gaa | gca | gca | gga | caa | gga | gtt | cag | acg | ggt | cga | cgg | ccg | tac | aga | 2784 |
| Gly | Glu | Ala | Ala | Gly | Gln | Gly | Val | Gln | Thr | Gly | Arg | Arg | Pro | Tyr | Arg | |
| | | 915 | | | | | 920 | | | | | 925 | | | | |
| aga | aag | ggt | cgc | gat | aat | ttg | gaa | cca | act | ccg | ttg | atg | gaa | ggt | gag | 2832 |
| Arg | Lys | Gly | Arg | Asp | Asn | Leu | Glu | Pro | Thr | Pro | Leu | Met | Glu | Gly | Glu | |
| | 930 | | | | | 935 | | | | | 940 | | | | | |
| ggg | aga | tct | ttc | aga | gta | ctg | ggt | ttc | aac | cag | agt | caa | agg | gcc | att | 2880 |
| Gly | Arg | Ser | Phe | Arg | Val | Leu | Gly | Phe | Asn | Gln | Ser | Gln | Arg | Ala | Ile | |
| 945 | | | | | 950 | | | | | 955 | | | | | 960 | |
| ttt | gta | cag | act | ttg | atg | agg | tat | gga | gct | ggc | aat | ttt | gat | tgg | aag | 2928 |
| Phe | Val | Gln | Thr | Leu | Met | Arg | Tyr | Gly | Ala | Gly | Asn | Phe | Asp | Trp | Lys | |
| | | | | 965 | | | | | 970 | | | | | 975 | | |
| gag | ttt | gtt | cct | cgc | tta | aag | cag | aag | acc | ttt | gaa | gaa | ata | aat | gaa | 2976 |
| Glu | Phe | Val | Pro | Arg | Leu | Lys | Gln | Lys | Thr | Phe | Glu | Glu | Ile | Asn | Glu | |
| | | | 980 | | | | | 985 | | | | | 990 | | | |
| tat | gga | ata | ctc | ttc | ttg | aag | cac | att | gct | gaa | gaa | ata | gac | gag | aat | 3024 |
| Tyr | Gly | Ile | Leu | Phe | Leu | Lys | His | Ile | Ala | Glu | Glu | Ile | Asp | Glu | Asn | |
| | | 995 | | | | | 1000 | | | | | 1005 | | | | |
| tct | cca | acc | ttt | tca | gat | ggt | gtg | ccc | aag | gaa | gga | ctt | aga | ata | gaa | 3072 |
| Ser | Pro | Thr | Phe | Ser | Asp | Gly | Val | Pro | Lys | Glu | Gly | Leu | Arg | Ile | Glu | |
| | 1010 | | | | | 1015 | | | | | 1020 | | | | | |
| gat | gtt | cta | gtc | aga | att | gct | ctt | ctg | ata | cta | gtt | cag | gag | aag | gtg | 3120 |
| Asp | Val | Leu | Val | Arg | Ile | Ala | Leu | Leu | Ile | Leu | Val | Gln | Glu | Lys | Val | |

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| Lys Phe Val Glu Asp His Pro Gly Lys Pro Val Phe Pro Ser Arg Ile | 1045 | 1050 | 1055 | |
| ctt gaa aga ttc ccc gga ctg aga agt gga aaa att tgg aag gag gaa | | | | 3216 |
| Leu Glu Arg Phe Pro Gly Leu Arg Ser Gly Lys Ile Trp Lys Glu Glu | 1060 | 1065 | 1070 | |
| cat gac aag ata atg ata cgt gct gtt tta aag cat ggg tac gga cgg | | | | 3264 |
| His Asp Lys Ile Met Ile Arg Ala Val Leu Lys His Gly Tyr Gly Arg | 1075 | 1080 | 1085 | |
| tgg caa gct att gtt gat gac aaa gag ttg ggg atc caa gag ctt atc | | | | 3312 |
| Trp Gln Ala Ile Val Asp Asp Lys Glu Leu Gly Ile Gln Glu Leu Ile | 1090 | 1095 | 1100 | |
| tgc aaa gaa ttg aat ttc cct cac ata agt ttg tct gct gct gaa caa | | | | 3360 |
| Cys Lys Glu Leu Asn Phe Pro His Ile Ser Leu Ser Ala Ala Glu Gln | 1105 | 1110 | 1115 | 1120 |
| gct ggt ttg cag ggg cag aat ggt agt ggg ggc tct aat ccg gga gca | | | | 3408 |
| Ala Gly Leu Gln Gly Gln Asn Gly Ser Gly Gly Ser Asn Pro Gly Ala | 1125 | 1130 | 1135 | |
| cag act aac cag aat cct gga agc gtt att act ggg aac aat aat gct | | | | 3456 |
| Gln Thr Asn Gln Asn Pro Gly Ser Val Ile Thr Gly Asn Asn Asn Ala | 1140 | 1145 | 1150 | |
| tct gct gat ggg gct caa gta aac tcg atg ttc tat tat cgg gac atg | | | | 3504 |
| Ser Ala Asp Gly Ala Gln Val Asn Ser Met Phe Tyr Tyr Arg Asp Met | 1155 | 1160 | 1165 | |
| cag aga cga ctt gtt gag ttt gtg aaa aag cga gtt ctg ctt ttg gag | | | | 3552 |
| Gln Arg Arg Leu Val Glu Phe Val Lys Lys Arg Val Leu Leu Leu Glu | 1170 | 1175 | 1180 | |
| aag gcg atg aat tat gaa tac gca gag gaa tat tat gga ctt ggt ggc | | | | 3600 |
| Lys Ala Met Asn Tyr Glu Tyr Ala Glu Glu Tyr Tyr Gly Leu Gly Gly | 1185 | 1190 | 1195 | 1200 |

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Ser Ser Ser Ile Pro Thr Glu Glu Pro Glu Ala Glu Pro Lys Ile Ala
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gac aca gtg gga gtg agc ttt att gag gtt gat gat gaa atg ctt gat 3696
Asp Thr Val Gly Val Ser Phe Ile Glu Val Asp Asp Glu Met Leu Asp
1220 1225 1230

gga ctt cct aag act gat cct atc act tca gaa gaa att atg ggg gct 3744
Gly Leu Pro Lys Thr Asp Pro Ile Thr Ser Glu Glu Ile Met Gly Ala
1235 1240 1245

gct gtt gac aac aac caa gcg cgg gtc gaa ata gct caa cat tat aac 3792
Ala Val Asp Asn Asn Gln Ala Arg Val Glu Ile Ala Gln His Tyr Asn
1250 1255 1260

cag atg tgc aaa ctt ctt gat gag aac gct cgg gaa tca gtc caa gca 3840
Gln Met Cys Lys Leu Leu Asp Glu Asn Ala Arg Glu Ser Val Gln Ala
1265 1270 1275 1280

tat gta aac aac caa cca ccg agt acc aag gtg aat gag agc ttc cgt 3888
Tyr Val Asn Asn Gln Pro Pro Ser Thr Lys Val Asn Glu Ser Phe Arg
1285 1290 1295

gca ctc aaa tct atc aat ggt aac att aac aca atc ctt tcg att aca 3936
Ala Leu Lys Ser Ile Asn Gly Asn Ile Asn Thr Ile Leu Ser Ile Thr
1300 1305 1310

tct gat caa tcc aag tca cat gaa gac gac acc aag cca gac cta aac 3984
Ser Asp Gln Ser Lys Ser His Glu Asp Asp Thr Lys Pro Asp Leu Asn
1315 1320 1325

aat gtt gag atg aag gac acg gcc gaa gaa aca aaa ccg tta aga ggt 4032
Asn Val Glu Met Lys Asp Thr Ala Glu Glu Thr Lys Pro Leu Arg Gly
1330 1335 1340

ggc gtc gtc gat ctg aat gtg gtg gag gga gag gag aac att gct gaa 4080
Gly Val Val Asp Leu Asn Val Val Glu Gly Glu Glu Asn Ile Ala Glu
1345 1350 1355 1360

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Ala Ser Gly Ser Val Asp Val Lys Met Glu Glu Ala Lys Glu Glu Glu
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Lys Pro Lys Asn Met Val Val Asp
1380

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<213> Arabidopsis thaliana

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Met Ser Ser Leu Val Glu Arg Leu Arg Ile Arg Ser Asp Arg Lys Pro
1 5 10 15

Val Tyr Asn Leu Asp Asp Ser Asp Asp Asp Phe Val Pro Lys Lys
20 25 30

Asp Arg Thr Phe Glu Gln Val Glu Ala Ile Val Arg Thr Asp Ala Lys
35 40 45

Glu Asn Ala Cys Gln Ala Cys Gly Glu Ser Thr Asn Leu Val Ser Cys
50 55 60

Asn Thr Cys Thr Tyr Ala Phe His Ala Lys Cys Leu Val Pro Pro Leu
65 70 75 80

Lys Asp Ala Ser Val Glu Asn Trp Arg Cys Pro Glu Cys Val Ser Pro
85 90 95

Leu Asn Glu Ile Asp Lys Ile Leu Asp Cys Glu Met Arg Pro Thr Lys
100 105 110

Ser Ser Glu Gln Gly Ser Ser Asp Ala Glu Pro Lys Pro Ile Phe Val
115 120 125

Pk1seq1.app

Lys Gln Tyr Leu Val Lys Trp Lys Gly Leu Ser Tyr Leu His Cys Ser
 130 135 140

Trp Val Pro Glu Lys Glu Phe Gln Lys Ala Tyr Lys Ser Asn His Arg
 145 150 155 160

Leu Lys Thr Arg Val Asn Asn Phe His Arg Gln Met Glu Ser Phe Asn
 165 170 175

Asn Ser Glu Asp Asp Phe Val Ala Ile Arg Pro Glu Trp Thr Thr Val
 180 185 190

Asp Arg Ile Leu Ala Cys Arg Glu Glu Asp Gly Glu Leu Glu Tyr Leu
 195 200 205

Val Lys Tyr Lys Glu Leu Ser Tyr Asp Glu Cys Tyr Trp Glu Ser Glu
 210 215 220

Ser Asp Ile Ser Thr Phe Gln Asn Glu Ile Gln Arg Phe Lys Asp Val
 225 230 235 240

Asn Ser Arg Thr Arg Arg Ser Lys Asp Val Asp His Lys Arg Asn Pro
 245 250 255

Arg Asp Phe Gln Gln Phe Asp His Thr Pro Glu Phe Leu Lys Gly Leu
 260 265 270

Leu His Pro Tyr Gln Leu Glu Gly Leu Asn Phe Leu Arg Phe Ser Trp
 275 280 285

Ser Lys Gln Thr His Val Ile Leu Ala Asp Glu Met Gly Leu Gly Lys
 290 295 300

Thr Ile Gln Ser Ile Ala Leu Leu Ala Ser Leu Phe Glu Glu Asn Leu
 305 310 315 320

Ile Pro His Leu Val Ile Ala Pro Leu Ser Thr Leu Arg Asn Trp Glu
 325 330 335

ART 34 AND

US 00/22725
PEBUS 28 AUG 2001

Pklseq1.app

Arg Glu Phe Ala Thr Trp Ala Pro Gln Met Asn Val Val Met Tyr Phe
340 345 350

Gly Thr Ala Gln Ala Arg Ala Val Ile Arg Glu His Glu Phe Tyr Leu
355 360 365

Ser Lys Asp Gln Lys Lys Ile Lys Lys Lys Lys Ser Gly Gln Ile Ser
370 375 380

Ser Glu Ser Lys Gln Lys Arg Ile Lys Phe Asp Val Leu Leu Thr Ser
385 390 395 400

Tyr Glu Met Ile Asn Leu Asp Ser Ala Val Leu Lys Pro Ile Lys Trp
405 410 415

Glu Cys Met Ile Val Asp Glu Gly His Arg Leu Lys Asn Lys Asp Ser
420 425 430

Lys Leu Phe Ser Ser Leu Thr Gln Tyr Ser Ser Asn His Arg Ile Leu
435 440 445

Leu Thr Gly Thr Pro Leu Gln Asn Asn Leu Asp Glu Leu Phe Met Leu
450 455 460

Met His Phe Leu Asp Ala Gly Lys Phe Gly Ser Leu Glu Glu Phe Gln
465 470 475 480

Glu Glu Phe Lys Asp Ile Asn Gln Glu Glu Gln Ile Ser Arg Leu His
485 490 495

Lys Met Leu Ala Pro His Leu Leu Arg Arg Val Lys Lys Asp Val Met
500 505 510

Lys Asp Met Pro Pro Lys Lys Glu Leu Ile Leu Arg Val Asp Leu Ser
515 520 525

Ser Leu Gln Lys Glu Tyr Tyr Lys Ala Ile Phe Thr Arg Asn Tyr Gln
530 535 540

ART 34 ANDI

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Pklseq1.app

Val Leu Thr Lys Lys Gly Gly Ala Gln Ile Ser Leu Asn Asn Ile Met
545 550 555 560

Met Glu Leu Arg Lys Val Cys Cys His Pro Tyr Met Leu Glu Gly Val
565 570 575

Glu Pro Val Ile His Asp Ala Asn Glu Ala Phe Lys Gln Leu Leu Glu
580 585 590

Ser Cys Gly Lys Leu Gln Leu Leu Asp Lys Met Met Val Lys Leu Lys
595 600 605

Glu Gln Gly His Arg Val Leu Ile Tyr Thr Gln Phe Gln His Met Leu
610 615 620

Asp Leu Leu Glu Asp Tyr Cys Thr His Lys Lys Trp Gln Tyr Glu Arg
625 630 635 640

Ile Asp Gly Lys Val Gly Gly Ala Glu Arg Gln Ile Arg Ile Asp Arg
645 650 655

Phe Asn Ala Lys Asn Ser Asn Lys Phe Cys Phe Leu Leu Ser Thr Arg
660 665 670

Ala Gly Gly Leu Gly Ile Asn Leu Ala Thr Ala Asp Thr Val Ile Ile
675 680 685

Tyr Asp Ser Asp Trp Asn Pro His Ala Asp Leu Gln Ala Met Ala Arg
690 695 700

Ala His Arg Leu Gly Gln Thr Asn Lys Val Met Ile Tyr Arg Leu Ile
705 710 715 720

Asn Arg Gly Thr Ile Glu Glu Arg Met Met Gln Leu Thr Lys Lys Lys
725 730 735

Met Val Leu Glu His Leu Val Val Gly Lys Leu Lys Thr Gln Asn Ile

ART 34 ADD

Pklseq1.app
745

740

750

Asn Gln Glu Glu Leu Asp Asp Ile Ile Arg Tyr Gly Ser Lys Glu Leu
755 760 765

Phe Ala Ser Glu Asp Asp Glu Ala Gly Lys Ser Gly Lys Ile His Tyr
770 775 780

Asp Asp Ala Ala Ile Asp Lys Leu Leu Asp Arg Asp Leu Val Glu Ala
785 790 795 800

Glu Glu Val Ser Val Asp Asp Glu Glu Glu Asn Gly Phe Leu Lys Ala
805 810 815

Phe Lys Val Ala Asn Phe Glu Tyr Ile Asp Glu Asn Glu Ala Ala Ala
820 825 830

Leu Glu Ala Gln Arg Val Ala Ala Glu Ser Lys Ser Ser Ala Gly Asn
835 840 845

Ser Asp Arg Ala Ser Tyr Trp Glu Glu Leu Leu Lys Asp Lys Phe Glu
850 855 860

Leu His Gln Ala Glu Glu Leu Asn Ala Leu Gly Lys Arg Lys Arg Ser
865 870 875 880

Arg Lys Gln Leu Val Ser Ile Glu Glu Asp Asp Leu Ala Gly Leu Glu
885 890 895

Asp Val Ser Ser Asp Gly Asp Glu Ser Tyr Glu Ala Glu Ser Thr Asp
900 905 910

Gly Glu Ala Ala Gly Gln Gly Val Gln Thr Gly Arg Arg Pro Tyr Arg
915 920 925

Arg Lys Gly Arg Asp Asn Leu Glu Pro Thr Pro Leu Met Glu Gly Glu
930 935 940

Pklseq1.app

Gly Arg Ser Phe Arg Val Leu Gly Phe Asn Gln Ser Gln Arg Ala Ile
945 950 955 960

Phe Val Gln Thr Leu Met Arg Tyr Gly Ala Gly Asn Phe Asp Trp Lys
965 970 975

Glu Phe Val Pro Arg Leu Lys Gln Lys Thr Phe Glu Glu Ile Asn Glu
980 985 990

Tyr Gly Ile Leu Phe Leu Lys His Ile Ala Glu Glu Ile Asp Glu Asn
995 1000 1005

Ser Pro Thr Phe Ser Asp Gly Val Pro Lys Glu Gly Leu Arg Ile
1010 1015 1020

Glu Asp Val Leu Val Arg Ile Ala Leu Leu Ile Leu Val Gln Glu
1025 1030 1035

Lys Val Lys Phe Val Glu Asp His Pro Gly Lys Pro Val Phe Pro
1040 1045 1050

Ser Arg Ile Leu Glu Arg Phe Pro Gly Leu Arg Ser Gly Lys Ile
1055 1060 1065

Trp Lys Glu Glu His Asp Lys Ile Met Ile Arg Ala Val Leu Lys
1070 1075 1080

His Gly Tyr Gly Arg Trp Gln Ala Ile Val Asp Asp Lys Glu Leu
1085 1090 1095

Gly Ile Gln Glu Leu Ile Cys Lys Glu Leu Asn Phe Pro His Ile
1100 1105 1110

Ser Leu Ser Ala Ala Glu Gln Ala Gly Leu Gln Gly Gln Asn Gly
1115 1120 1125

Ser Gly Gly Ser Asn Pro Gly Ala Gln Thr Asn Gln Asn Pro Gly
1130 1135 1140

Pklseq1.app

| | | | | | | | | | | | | | | |
|-----|------|-----|-----|-----|-----|------|-----|-----|-----|-----|------|-----|-----|-----|
| Ser | Val | Ile | Thr | Gly | Asn | Asn | Asn | Ala | Ser | Ala | Asp | Gly | Ala | Gln |
| | 1145 | | | | | 1150 | | | | | 1155 | | | |
| Val | Asn | Ser | Met | Phe | Tyr | Tyr | Arg | Asp | Met | Gln | Arg | Arg | Leu | Val |
| | 1160 | | | | | 1165 | | | | | 1170 | | | |
| Glu | Phe | Val | Lys | Lys | Arg | Val | Leu | Leu | Leu | Glu | Lys | Ala | Met | Asn |
| | 1175 | | | | | 1180 | | | | | 1185 | | | |
| Tyr | Glu | Tyr | Ala | Glu | Glu | Tyr | Tyr | Gly | Leu | Gly | Gly | Ser | Ser | Ser |
| | 1190 | | | | | 1195 | | | | | 1200 | | | |
| Ile | Pro | Thr | Glu | Glu | Pro | Glu | Ala | Glu | Pro | Lys | Ile | Ala | Asp | Thr |
| | 1205 | | | | | 1210 | | | | | 1215 | | | |
| Val | Gly | Val | Ser | Phe | Ile | Glu | Val | Asp | Asp | Glu | Met | Leu | Asp | Gly |
| | 1220 | | | | | 1225 | | | | | 1230 | | | |
| Leu | Pro | Lys | Thr | Asp | Pro | Ile | Thr | Ser | Glu | Glu | Ile | Met | Gly | Ala |
| | 1235 | | | | | 1240 | | | | | 1245 | | | |
| Ala | Val | Asp | Asn | Asn | Gln | Ala | Arg | Val | Glu | Ile | Ala | Gln | His | Tyr |
| | 1250 | | | | | 1255 | | | | | 1260 | | | |
| Asn | Gln | Met | Cys | Lys | Leu | Leu | Asp | Glu | Asn | Ala | Arg | Glu | Ser | Val |
| | 1265 | | | | | 1270 | | | | | 1275 | | | |
| Gln | Ala | Tyr | Val | Asn | Asn | Gln | Pro | Pro | Ser | Thr | Lys | Val | Asn | Glu |
| | 1280 | | | | | 1285 | | | | | 1290 | | | |
| Ser | Phe | Arg | Ala | Leu | Lys | Ser | Ile | Asn | Gly | Asn | Ile | Asn | Thr | Ile |
| | 1295 | | | | | 1300 | | | | | 1305 | | | |
| Leu | Ser | Ile | Thr | Ser | Asp | Gln | Ser | Lys | Ser | His | Glu | Asp | Asp | Thr |
| | 1310 | | | | | 1315 | | | | | 1320 | | | |
| Lys | Pro | Asp | Leu | Asn | Asn | Val | Glu | Met | Lys | Asp | Thr | Ala | Glu | Glu |
| | 1325 | | | | | 1330 | | | | | 1335 | | | |

ART 34 AMDT

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Pklseq1.app

Thr Lys Pro Leu Arg Gly Gly Val Val Asp Leu Asn Val Val Glu
1340 1345 1350

Gly Glu Glu Asn Ile Ala Glu Ala Ser Gly Ser Val Asp Val Lys
1355 1360 1365

Met Glu Glu Ala Lys Glu Glu Glu Lys Pro Lys Asn Met Val Val
1370 1375 1380

Asp

<210> 3

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<221> misc_feature

<222> 18-19

<223> AFLP Primer EcoRI for AFLP Mapping Analysis in Example 1;
n may be a, g, c or t

<400> 3

agactgcgta ccatttcnn 19

<210> 4

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<221> misc_feature

INVENTED

ART 34 ANDP

US 00/22725
PEAUS 28 AUG 2001

Pklseq1.app

<222> 17-19

<223> AFLP Primer MseI for AFLP Mapping Analysis in Example 1;
n may be a, g, c or t

<400> 4

gatgagtcct gagtaannn 19

<210> 5

<211> 21

<212> DNA

<213> Arabidopsis thaliana

<220>

<223> Primers for PCR of Example 2;
sequence complementary to nucleotides 1725-1745 of SEQ ID NO:1

<400> .5

tggtgagcca gttattcacg a 21

<210> 6

<211> 21

<212> DNA

<213> Arabidopsis thaliana

<220>

<223> Primers for PCR of Example 2;
sequence complementary to nucleotides 1934-1914 in SEQ ID NO:1

<400> 6

acctttccat caattcgctc g 21

<210> 7

<211> 30

<212> DNA

ART 34 AMDT

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Pklseq1.app

<213> Artificial Sequence

<220>

<221> misc_feature

<222> 1-30

<223> Primers for PCR of Example 2

<400> 7

ccgctcgaga accccaatga ccagctcagt 30

<210> 8

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<221> misc_feature

<222> 1-21

<223> Primers for PCR of Example 2;
sequence complementary to nucleotides 672-652 of
LEC1 cDNA sequence

<400> 8

ccttcttcac ttatactgac c 21

<210> 9

<211> 21

<212> DNA

<213> Arabidopsis thaliana

<220>

<223> Primers for PCR of Example 2;
nucleotides 65-85 of ROC3 cDNA sequence

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AMENDED SHEET

ART 34 AMEND

Pklseq1.app

<400> 9

aagtctactt cgacatgacc g 21

<210> 10

<211> 21

<212> DNA

<213> Arabidopsis thaliana

<220>

<223> Primers for PCR of Example 2;
 sequence complementary to nucleotides 524-504 of ROC3
 cDNA sequence

<400> 10

cttccagagt cagatccaac c 21

<210> 11

<211> 30

<212> DNA

<213> Arabidopsis thaliana

<220>

<223> Primers for PCR of Example 4;
 represent nucleotides 895-924 in SEQ ID NO:1 wherein nucleotide
 907 is changed from "a" to "g"

<400> 11

gaaatgggac taggcaggac aattcaaagc 30

<210> 12

<211> 30

<212> DNA

ART 34 AND

STATUS 00/22725
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Pklseq1.app

<213> Arabidopsis thaliana

<220>

<223> Primers for PCR of Example 4;
represent sequence complementary to nucleotides
924-895 in SEQ ID NO:1, with nucleotide 911 changed from "t" to
"c".

<400> 12

gctttgaatt gtctgccta gtcccatctc 30

<210> 13

<211> 47

<212> DNA

<213> Artificial Sequence

<220>

<221> misc_feature

<222> 1-47

<223> Primers for PCR of Example 4

<400> 13

aagccaaaga acatggctgt tgatctagag gatcctgaag ctcgaaa 47

<210> 14

<211> 52

<212> DNA

<213> Artificial Sequence

<220>

<221> misc_feature

<222> 1-52

<223> Primers for PCR of Example 4

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TURNED SHEET

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Pklseq1.app

<400> 14

gaatcttgat ttaccagttg agtcattttt gatgaaacag aagctttttg at 52

<210> 15

<211> 21

<212> DNA

<213> Arabidopsis thaliana

<220>

<223> Primers for PCR of Example 4;
represent sequence complementary to nucleotides 4152-4132 in SEQ
ID NO:1

<400> 15

atcaacgacc atgttctttg g 21

<210> 16

<211> 22

<212> DNA

<213> Arabidopsis thaliana

<220>

<223> Primers for PCR of Example 4;
represent nucleotides 4153-4174 in SEQ ID NO:1

<400> 16

tgactcaact ggtaaatacaa ga 22

<210> 17

<211> 30

<212> DNA

<213> Artificial Sequence

ART 34 AML

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IPEAUS 28 AUG 2001

Pklseq1.app

<220>

<221> misc_feature

<222> 1-30

<223> Primers for PCR of Example 5

<400> 17

ccgctcgagt gagtagtttg gtggagaggc 30

<210> 18

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<221> misc_feature

<222> 1-30

<223> Primers for PCR of Example 5

<400> 18

ccggaattcc atcggaggaa ccttggtcac 30

<210> 19

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<221> misc_feature

<222> 1-30

<223> Primers for PCR of Example 5

AMT 2001-08-28

Pklseq1.app

<222> 1-30

<223> Primers for PCR of Example 5

<400> 24

tgctctagac cctcacataa gtttgtctgc 30

<210> 25

<211> 31

<212> DNA

<213> Artificial Sequence

<220>

<221> misc_feature

<222> 1-31

<223> Primers for PCR of Example 6

<400> 25

cgcgatcct tttccactt ctcagtcgg g 31

<210> 26

<211> 34

<212> DNA

<213> Artificial Sequence

<220>

<221> misc_feature

<222> 1-34

<223> Primers for PCR of Example 4

<400> 26

cttcgaactc gagggatccc catggctagc agct 34

Pklseq1.app

<400> 19
cgcggatccc atcggaggaa ccttggttcac 30

<210> 20
<211> 30
<212> DNA
<213> Artificial Sequence
<220>
<221> misc_feature
<222> 1-30
<223> Primers for PCR of Example 5

<400> 20
tgctctagat gagtagtttg gtggagagggc 30

<210> 21
<211> 30
<212> DNA
<213> Artificial Sequence
<220>
<221> misc_feature
<222> 1-30
<223> Primers for PCR of Example 5

<400> 21
ccgctcgagc cctcacataa gtttgtctgc 30

<210> 22

Pklseq1.app

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<221> misc_feature

<222> 1-30

<223> Primers for PCR of Example 5

<400> 22

ccggaattcg tcttaggaag tccatcaagc 30

<210> 23

<211> 30

<212> DNA

<213> Artificial Sequence

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<221> misc_feature

<222> 1-30

<223> Primers for PCR of Example 5

<400> 23

cgcggatccg tcttaggaag tccatcaagc 30

<210> 24

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<221> misc_feature

Pklseq1.app

<210> 27

<211> 34

<212> DNA

<213> Artificial Sequence

<220>

<221> misc_feature

<222> 1-34

<223> Primers for PCR of Example 4

<400> 27

gctagccatg gggatccctc gagttcgaag gtac 34

<210> 28

<211> 12

<212> DNA

<213> Artificial Sequence

<220>

<221> misc_feature

<222> 1-12

<223> Primers for forming cassette inserted into pCAMBIA3300
in Example 4

<400> 28

ccaggtacct gg 12

<210> 29

<211> 20

<212> DNA

Pklseq1.app

<213> Artificial Sequence

<220>

<221> misc_feature

<222> 1-20

<223> Primers for forming cassette inserted into pCAMBIA3300
in Example 4

<400> 29

aattccaggt acctggcatg 20

<210> 30

<211> 38

<212> DNA

<213> Artificial Sequence

<220>

<221> misc_feature

<222> 1-38

<223> Sequence for forming clone of the rat glucocorticoid receptor
in Example 4

<400> 30

tctagaggat cctgaagctc gaaaaacaaa gaaaaaaaa 38